Paul F. Fischer
Senior Scientist

Mathematics and Computer Science Division
Argonne National Laboratory
9700 South Cass Avenue, Bldg. 221
Argonne, IL 60439

1-630-252-6018 phone
1-630-252-5986 fax
fischer@mcs.anl.gov

Dear SciDAC Committee Member,

This letter is to express strong support for the SciDAC Visualization and Analytics Center for Enabling Technologies for their upcoming review. The team has provided invaluable support helping me and my collaborators make progress towards petascale science through their development and outreach for the VisIt visualization and analysis software, which we regularly use to in production mode to analyze our simulation results.

I am writing as the principal developer of the ANL fluid dynamics simulation code, Nek5000, and as an INCITE user running reactor thermal hydraulics simulations on the Blue Gene/P machine at Argonne's Advanced Leadership Computing Facility (ALCF). Our INCITE simulations regularly comprise millions of CPU hours and billions of degrees of freedom. Typical production runs involve anywhere from 8000 to 65000 processors. We use VisIt either on the ALCF analytics machine, Eureka, or on our own 128-core Linux cluster dedicated to the reactor project. Out of the many analysis options where we may have chosen to concentrate our effort, VisIt stood out as particularly attractive because of the certainty that it would scale. The *certainty* of this prospect was vital to our petascale planning as it allowed us to expend our contingency efforts in other areas.

VACET has helped us in specific ways. First, they provide infrastructure and momentum for the VisIt project, which we depend on for visualization and analysis of our petascale runs. Second, the streamline algorithms that the VACET team has developed provide a new functionality that we value, especially from an analysis perspective. Third, the networking changes VACET added to VisIt, done specifically for my collaborators, allow them to better utilize VisIt remotely. The collaboration has been so successful that we now promote VisIt as the default analysis engine for Nek5000, which is currently being used by about 30 research groups worldwide.

In short, I depend on the VisIt project for my visualization and analysis needs and VACET is helping me succeed with this project.

Sincerely,

Paul F. Fischer
Senior Scientist